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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 10/798,401  | 03/12/2004  | Naoya Kamimura       | 119066                       | 6066             |
| 25944   | 7590        | 05/17/2005           |                              |                  |
| OLIFF & BERRIDGE, PLC<br>P.O. BOX 19928<br>ALEXANDRIA, VA 22320 |             |                      | EXAMINER<br>COURSON, TANIA C |                  |
|   |             |                      | ART UNIT                     | PAPER NUMBER     |
|   |             |                      | 2859                         |                  |

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |   |
|------------------------------|--------------------------------------|--|---|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/798,401 | <b>Applicant(s)</b><br>KAMIMURA, NAOYA |   |
|                              | <b>Examiner</b><br>Tania C. Courson  | <b>Art Unit</b><br>2859                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15JUL04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>26AUG04 &amp; 12MAR04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a developer supplying unit” as stated in line 2 of claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 1 and 13 are objected to because of the following informalities:
- a. Claim 1, lines 17-18, “endless belt is configured to be transferred the developer images” is confusing claim language.
  - b. Claim 13, line 4, “the residual developer” lacks antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-6, 9-15 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshikawa (JP 2001-142279).

Yoshikawa discloses in Figure 1, an image forming device comprising:

With respect to claim 1:

- a) an endless belt (21) configured to be rotatably driven (Fig. 1);
- b) a plurality of image carriers (11) disposed in a moving direction of the endless belt (Fig. 1);
- c) a plurality of charging units (12) provided for each of the plurality of image carriers respectively and configured to uniformly charge a surface of each of the image carrier (Fig. 1);
- d) an exposing unit (13) configured to expose the plurality of image carriers charged by the charging unit to form an electrostatic latent image on the plurality of image carriers (Fig. 1);
- e) a plurality of developing units (14) provided for each of the plurality of image carriers respectively and configured to develop the electrostatic latent image on each of the image carrier with a developer of different color to form a developer image and to retrieve a residual developer on the image carrier (Fig. 1);

- f) wherein the endless belt is configured to be transferred the developer images formed on each of the plurality of image carriers thereon to form a color image, and transfers the color image onto a recording medium (Fig. 1), and;
- g) wherein the developing unit provided at a most upstream position with respect to the moving direction of the endless belt forms the developer image with a developer of black color (Fig. 1), and is configured to retrieve a residual developer on the endless belt (Fig. 1).

With respect to claim 12:

- a) an endless belt (21) configured to be rotatably driven (Fig. 1) and conveys a recording medium (31);
- b) a plurality of image carriers (11) disposed in a moving direction of the endless belt (Fig. 1);
- c) a plurality of charging units (12) provided for each of the plurality of image carriers respectively and configured to uniformly charge a surface of each of the image carrier (Fig. 1);
- d) an exposing unit (13) configured to expose the plurality of image carriers charged by the charging unit to form an electrostatic latent image on the plurality of image carriers (Fig. 1);
- e) a plurality of developing units (14) provided for each of the plurality of image carriers respectively and configured to develop the electrostatic latent image on each of the image carrier with a developer of different color to form a

- developer image and to retrieve a residual developer on the image carrier (Fig. 1), wherein each of the plurality of image carriers transfer the developer images on the recording medium to form a color image (Fig. 1);
- f) wherein the developing unit provided at a most upstream position with respect to the moving direction of the endless belt forms the developer image with a developer of black color (Fig. 1), and is configured to retrieve a developer adhered on the endless belt (Fig. 1).

With respect to claims 2-6, 9-11, 13-15 and 18-20:

- a) wherein the developing unit provided at the most upstream position retrieves the residual developer on the endless belt by electrically moving the residual developer (Fig. 1);
- b) a developer charging unit that charges the developer on the endless belt in a reverse polarity to a charging polarity of the developer (translation, paragraph 19);
- c) wherein the image forming apparatus operates in a plurality of modes in which including; a normal mode in which the developer on the endless belt is charged by the developer charging unit and electrically moved to the image carrier provided on the most upstream in a state where the image carrier provided on the most upstream is exposed to light by the exposing unit (translation, abstract) and a cleaning mode in which the developer on the endless belt is charged by the developer charging unit and electrically moved

to the image carrier provided on the most upstream in a state where the image carrier provided on the most upstream is not exposed to light by the exposing unit (translation, abstract);

- d) a retrieval restoring unit (50) that temporarily retrieves the developer on the endless belt and restoring the retrieved developer onto the endless belt (Fig. 1);
- e) a bias generating unit (translation, paragraph 49) that applies a bias generating a potential difference to move the developer on the endless belt to the image carrier (translation, paragraph 49);
- f) wherein the developing unit comprises a developer carrier (15) disposed to be in contact with the image carrier (Fig. 1) and carries the developer for forming the developer image by developing an electrostatic image on the image carrier (Fig. 1) and wherein the developer carrier is configured to retrieve the residual developer on the image carrier (Fig. 1);
- g) wherein the developing unit comprises a developer supplying unit (15) disposed to be in contact with the developer carrier and supplies the developer onto the developer carrier while charging the developer and wherein the developer of black color is configured to be more chargeable than other developers of other colors (Fig. 1);
- h) wherein the developing unit employs a polymerized toner as the developer (translation, paragraph 8).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7-8 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of Omata et al. (US 6,442,356 B2).

Yoshikawa discloses an image forming device, as stated above in paragraph 4.

Yoshikawa does not disclose wherein a charging unit is disposed to be in non-contact with an image carrier and wherein a developing unit is configured to be separable from an image carrier and detachable with the image forming apparatus.

Omata et al. teach an image forming apparatus that consists of a charging unit (32) disposed to be in non-contact with an image carrier (Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the image forming apparatus of Yoshikawa, so as to replace the charging unit of Yoshikawa with the charging unit of Omata et al., because both are well known alternate types of charging units, which will perform the same function, if one is replaced with the other, of charging a surface of an image carrier.



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Regarding claims 8 and 17: Yoshikawa and Omata et al. disclose a developing unit and an image carrier (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to develop a unit separable from the image carrier, since it has been held that constructing a formerly integral structure in various elements involves only routing skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179. Therefore, one skilled in the art would develop a unit separable from the image carrier in order to suit the needs of the user of the device.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above discloses an image forming device:

Abe et al. (US 6,865,361 B2)

Nomura et al. (US 6,708,011 B2)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (571) 272-2239. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245.

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The fax number for this Organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DIEGO F.F. GUTIERREZ  
SUPERVISORY PATENT EXAMINER  
GROUP ART UNIT 2859

TCC  
May 13, 2005

**CHRISTOPHER W. FULTON**  
**PRIMARY EXAMINER**